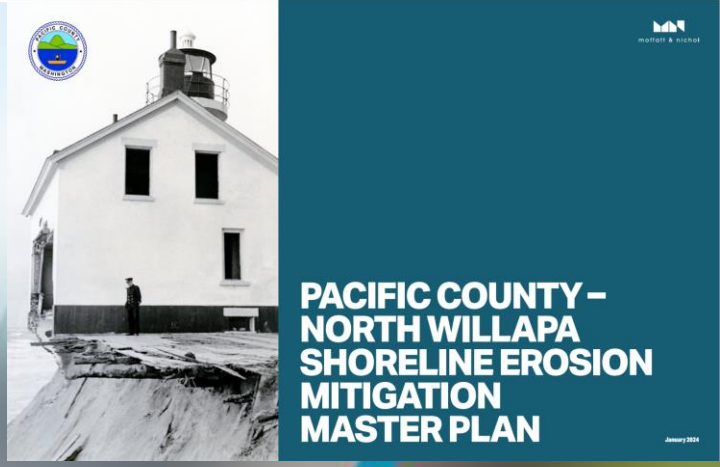


Willapa-Erosion-Mitigation-Master-Plan-Final-Final.pdf (wacoastalnetwork.com)

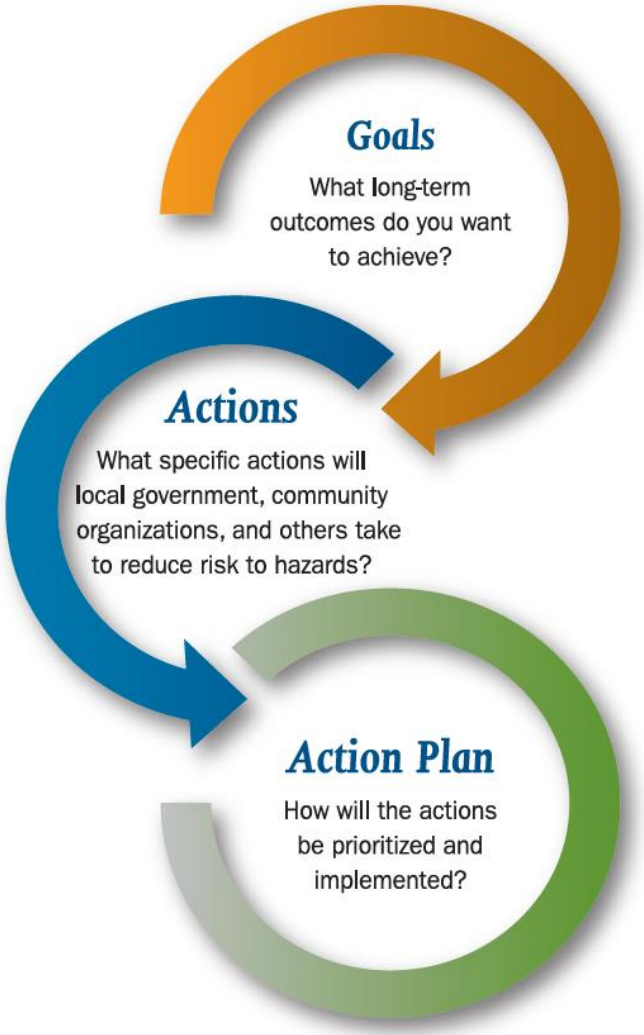
WECAN Briefing Meeting – August 14, 2024

Willapa Shoreline Erosion Mitigation Master Plan - Overview

In Collaboration with :

Master Plan Goals/Objectives/Aspirations

- Goal(s) (what long-term outcomes do you want to achieve):
  - Establish a vision, to maintain momentum and cohesion among various stakeholders.
  - Establish a long-term master plan (broadly supported by stakeholders) for mitigation of shoreline erosion along North Willapa shoreline and protection of built and natural assets against coastal hazards. The plan would be adaptable against climate change and would include specific actions in terms of monitoring, maintenance, strategy for pursuit of funding and permit applications.
- SMART Objectives (Measurable Outcome):
  - Compile and document previous/ongoing erosion mitigation efforts
  - Alignment of stakeholders on natural and built assets exposed to highest risk
  - Document purpose and need for shoreline erosion mitigation aligned with funding opportunities
  - Identify underlying cause of shoreline erosion
  - Document lessons learned from previous efforts
  - Increasing public awareness about risks associated with shoreline erosion
  - Informing public about the master plan (process and outcomes)
  - Identify reliable sources of funding and details of funding programs
  - Identify next steps/action plan (includes monitoring) for the Master Plan implementation
  - Master Plan Documentation
- Master Plan Aspirations:
  - Build consensus among stakeholders on a system-wide and coordinated plan of action
  - Align local and state resources, needs, and interests as much as possible to gain efficiencies



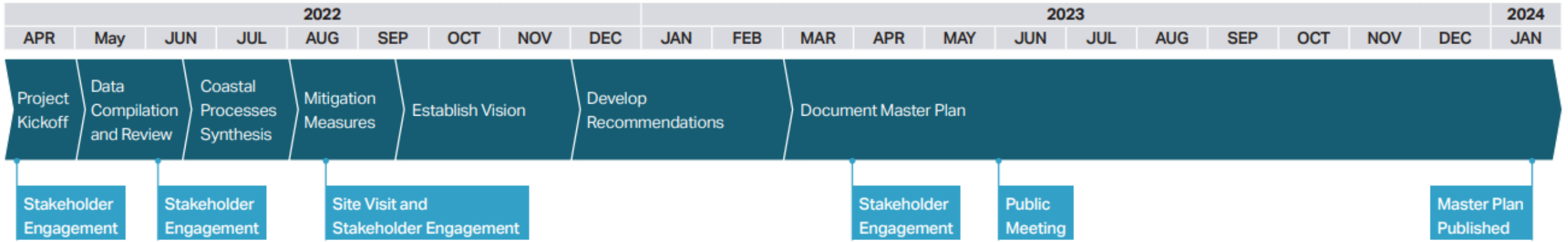
From FEMA Hazard Mitigation Guidebook (2012)

Master Plan Study Area

PROJECT STUDY AREA

- Expanded from Demonstration Project
- Developed with guidance from steering committee
- Sub reaches based on a number of factors

Project Planning Process



DATA COMPILATION AND REVIEW

OBJECTIVE

To develop a catalog of existing information building on the library compiled during Pacific County's Demonstration Project.

APPROACH

A detailed Request for Information (RFI) was sent to all project partners and the team compiled the information to be shared with public through a website.

COASTAL PROCESSES SYNTHESIS

OBJECTIVE

To compile existing characterization of coastal processes and potential causes of erosion and to identify data gaps/ unanswered questions.

APPROACH

This task was conducted by review of technical literature as well as discussions with subject matter experts with USACE, ECY, and WSDOT.

MITIGATION MEASURES

OBJECTIVE

To compile previously used mitigation measures, documenting performance and lessons learned to inform new mitigation approaches.

APPROACH

Develop a matrix of erosion mitigation options including cost estimates, maintenance requirements, and contingency measures to assess shoreline impacts. Review mitigation measures with stakeholders.

ESTABLISH VISION

OBJECTIVE

To define the overall vision for the study area to enable a coordinated, system-wide mitigation approach.

APPROACH

To define the overall vision for the coastline and surrounding areas to enable a coordinated, system-wide mitigation approach.

DEVELOP RECOMMENDATIONS

OBJECTIVE

To develop targeted, focused recommendations for further research that are applicable to potential mitigation measures.

APPROACH

Document common needs, desires, and data gaps with regard to erosion mitigation solutions. Provide initial recommendations for stakeholder review and outline funding pathways to fill research gaps.

DOCUMENT MASTER PLAN

OBJECTIVE

To produce a formal Master Plan document that encompasses findings from all previous steps in the project process to inform future activities.

APPROACH

Compile findings to summarize project needs, coastal setting, public outreach efforts, master plan recommendations, implementation strategies, and cost estimates in a single document.

Stakeholder & Public Outreach

PUBLIC OUTREACH AND ENGAGEMENT

TRANSLATING COMMUNITY DESIRE

An integral part of the master plan has been working collaboratively with key stakeholders to understand various priorities and perspectives, translating the community's desires into actionable projects.

STAKEHOLDER COMMITTEE ENGAGEMENT

- 20 representatives from key stakeholder groups were continuously engaged/updated throughout the process.

STAKEHOLDER INTERVIEWS

- One-on-one interviews were conducted with representatives of Drainage District, County, Tribe, WSDOT, USACE, and WSDOT.

TECHNICAL ADVISOR DISCUSSIONS

- Discussions were held with technical experts with USACE and WDOE.

SITE VISIT

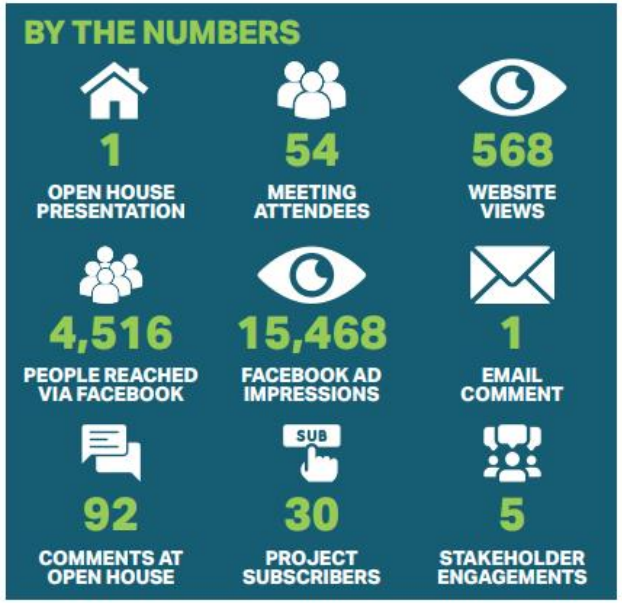
- A site visit was conducted with stakeholder committee members on August 17, 2022.

PUBLIC MEETING

- A public open house was held in early June of 2023 to seek input from the general public on the draft of the master plan.

This combination of meetings and online input yielded favorable results, both in terms of participation and clear community direction for the future of North Willapa Shoreline Erosion Mitigation.

Feedback from these various meetings with the stakeholders was able to be used and translated into clear community desires.




Consultant team and stakeholder committee members visited the site in summer of 2021 (Photograph courtesy of Henry Bell with Department of Ecology)

COMMUNITY DESIRES

The Project Team sought input from the stakeholder committee about their desired long-term outcomes and overarching desires of the master plan. In working together, the stakeholders identified the needs that would best represent themselves and the surrounding community.

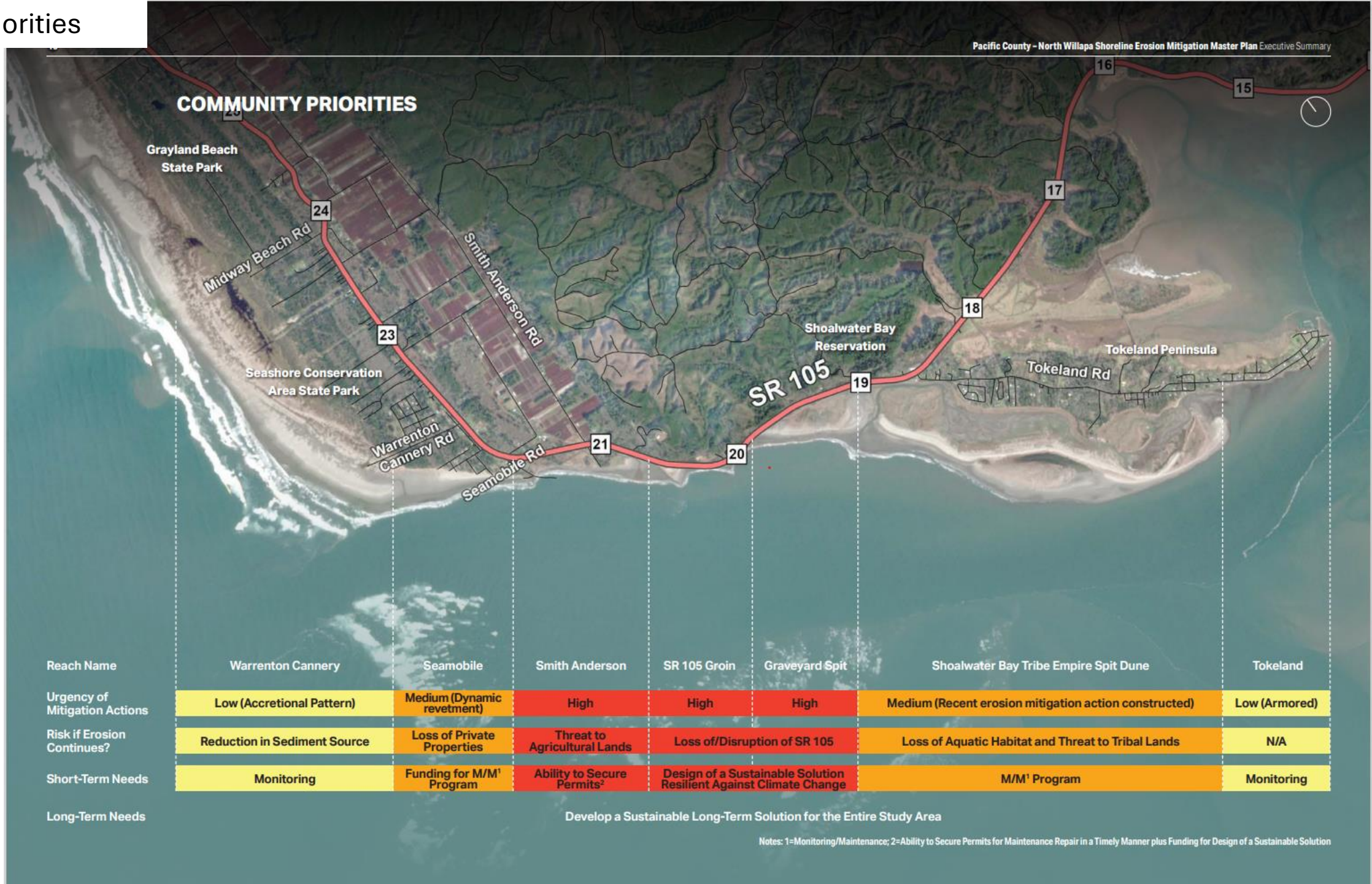
Summary of Findings & Recommendations - 1

Topic	Summary of Findings
• Coastal Erosion Coordinator for Erosion Mitigation Planning, Funding, & Monitoring Efforts	• **Lead Coordinator** • **Community Collaboration** • **Coordination of Ongoing Plans**
• North Cove Study Area Holistic Solutions	• **Study Area Wide Approach** for dynamic revetment to work properly

Lead Entity & Continual Coordination & Collaboration is critical

Champion/Lead Coordinator

Community Priorities

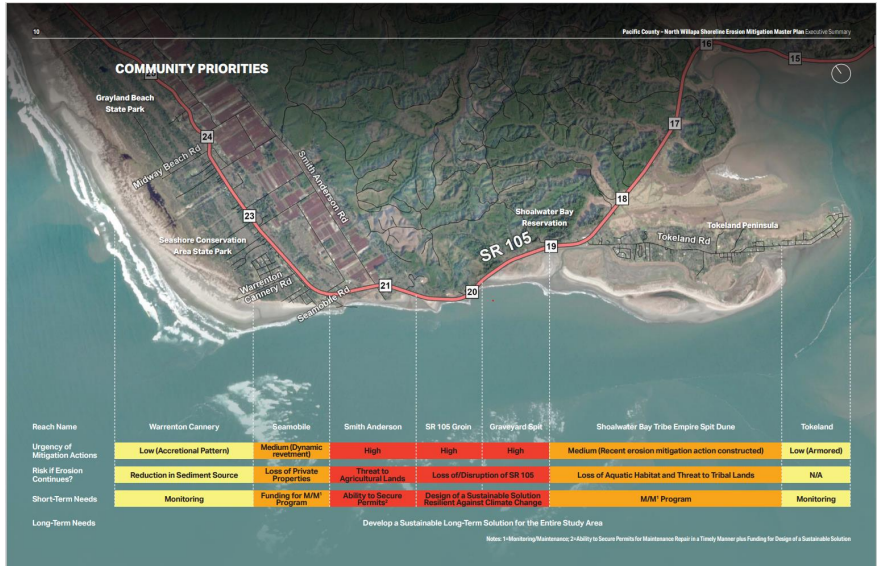


Reach Name	Warrenton Cannery	Seamobile	Smith Anderson	SR 105 Groin	Graveyard Spit	Shoalwater Bay Tribe Empire Spit Dune	Tokeland
Urgency of Mitigation Actions	Low (Accretional Pattern)	Medium (Dynamic revetment)	High	High	High	Medium (Recent erosion mitigation action constructed)	Low (Armored)
Risk if Erosion Continues?	Reduction in Sediment Source	Loss of Private Properties	Threat to Agricultural Lands	Loss of/Disruption of SR 105		Loss of Aquatic Habitat and Threat to Tribal Lands	N/A
Short-Term Needs	Monitoring	Funding for M/M[1] Program	Ability to Secure Permits[2]	Design of a Sustainable Solution Resilient Against Climate Change		M/M[1] Program	Monitoring
Long-Term Needs	Develop a Sustainable Long-Term Solution for the Entire Study Area						

Notes: 1=Monitoring/Maintenance; 2=Ability to Secure Permits for Maintenance Repair in a Timely Manner plus Funding for Design of a Sustainable Solution

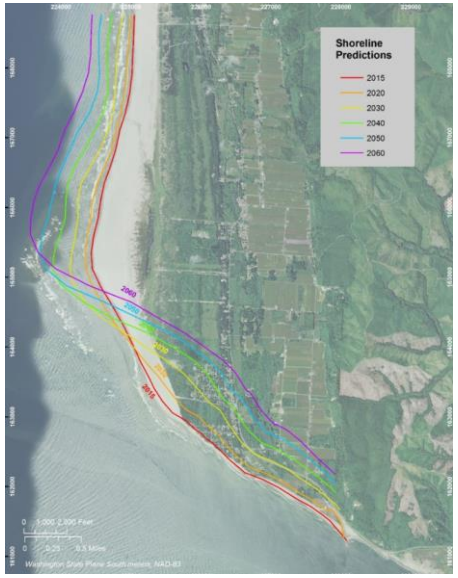
Summary of Findings & Recommendations - 2

Topic	Summary of Findings
• Erosion Protection Needs	• **Demonstration Project Performance** – good results on 35% of study area • **Areas of Critical Need** – 75% of shoreline in critical need • **Erosion Protection Systems** – 75% nature based/25% some combination TBD methods
• Assets At Risk	• **Community Lifelines** – Health, Medical, Power, Schools • **Flood Protection of Agricultural Lands** • **Public Roads** –SR105 • **Tribal Lands –** Risk of Loss • **Estuary Habitat**



Criticality of Action by Reach

Nature Based Solutions

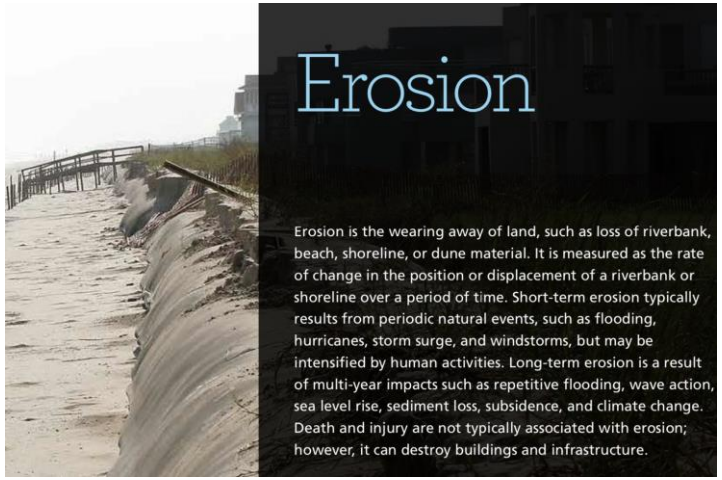


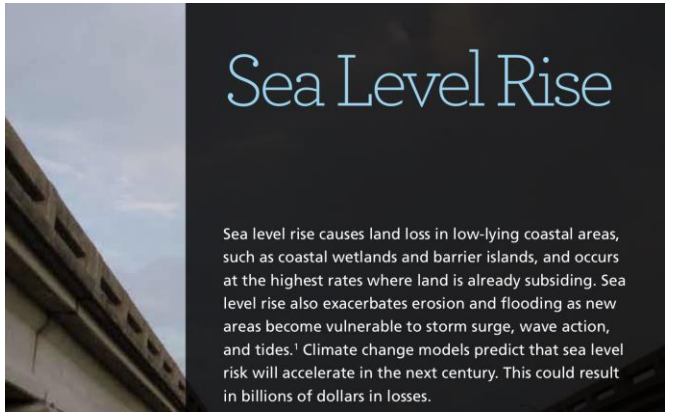
Erosion Risks

Vulnerability of Community Lifelines

Coastal Processes & Multihazards

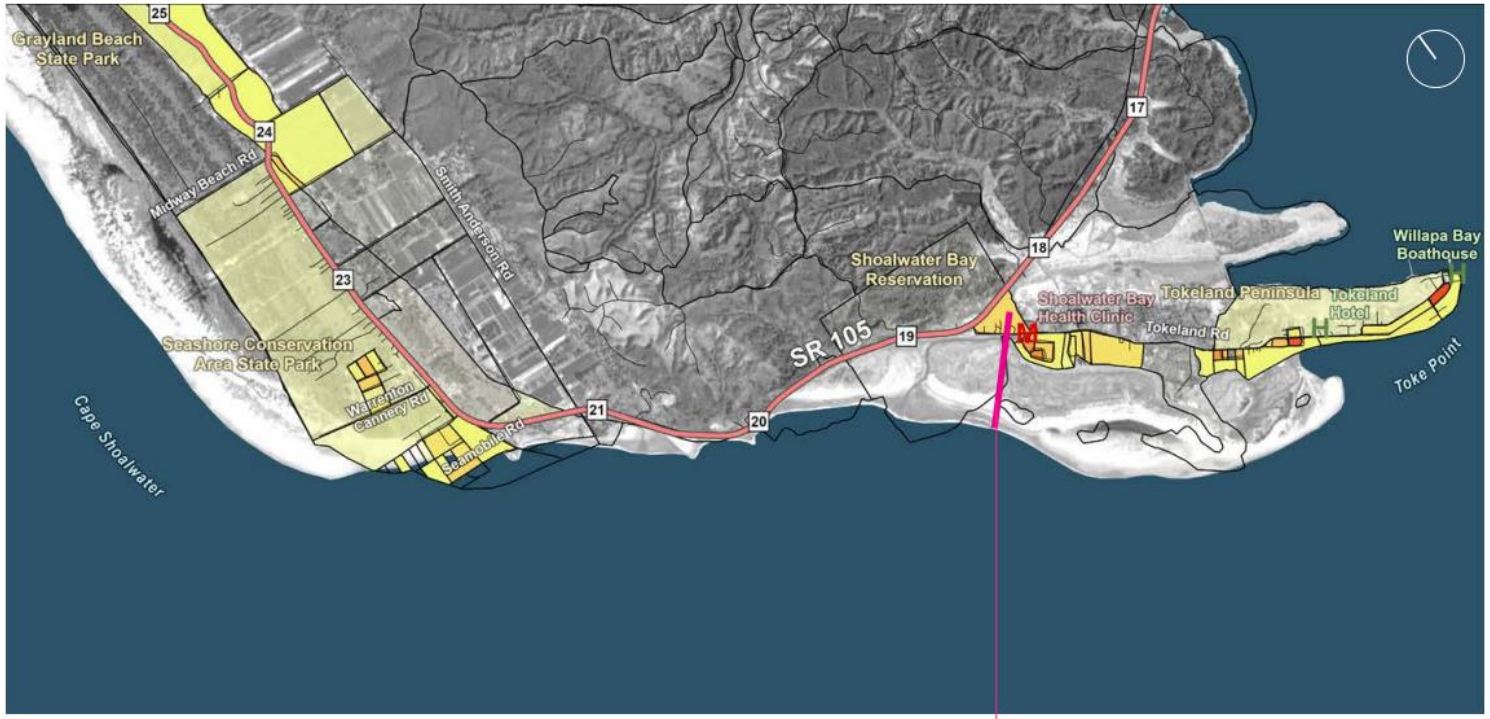
- Waves
- Estuarine Tidal Hydrodynamics
- Geomorphologic Processes

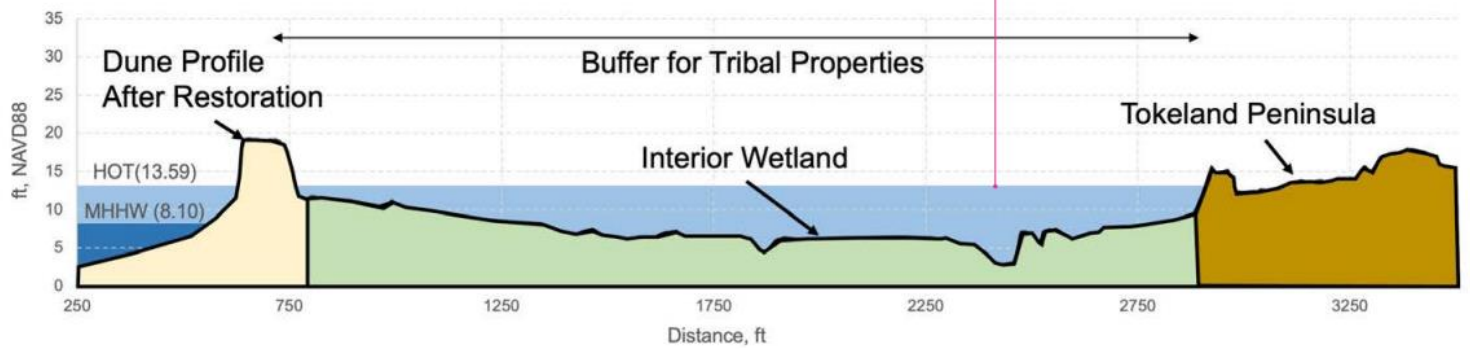




Community Assets at Risk

M Medical
H Historic Properties
Roadways
Major Roads
Minor Roads
Other Roads
SR-105
Census Blocks, 2000
Population Density
0.0 Persons/Acre
8.0 Persons/Acre





Community Assets at Risk

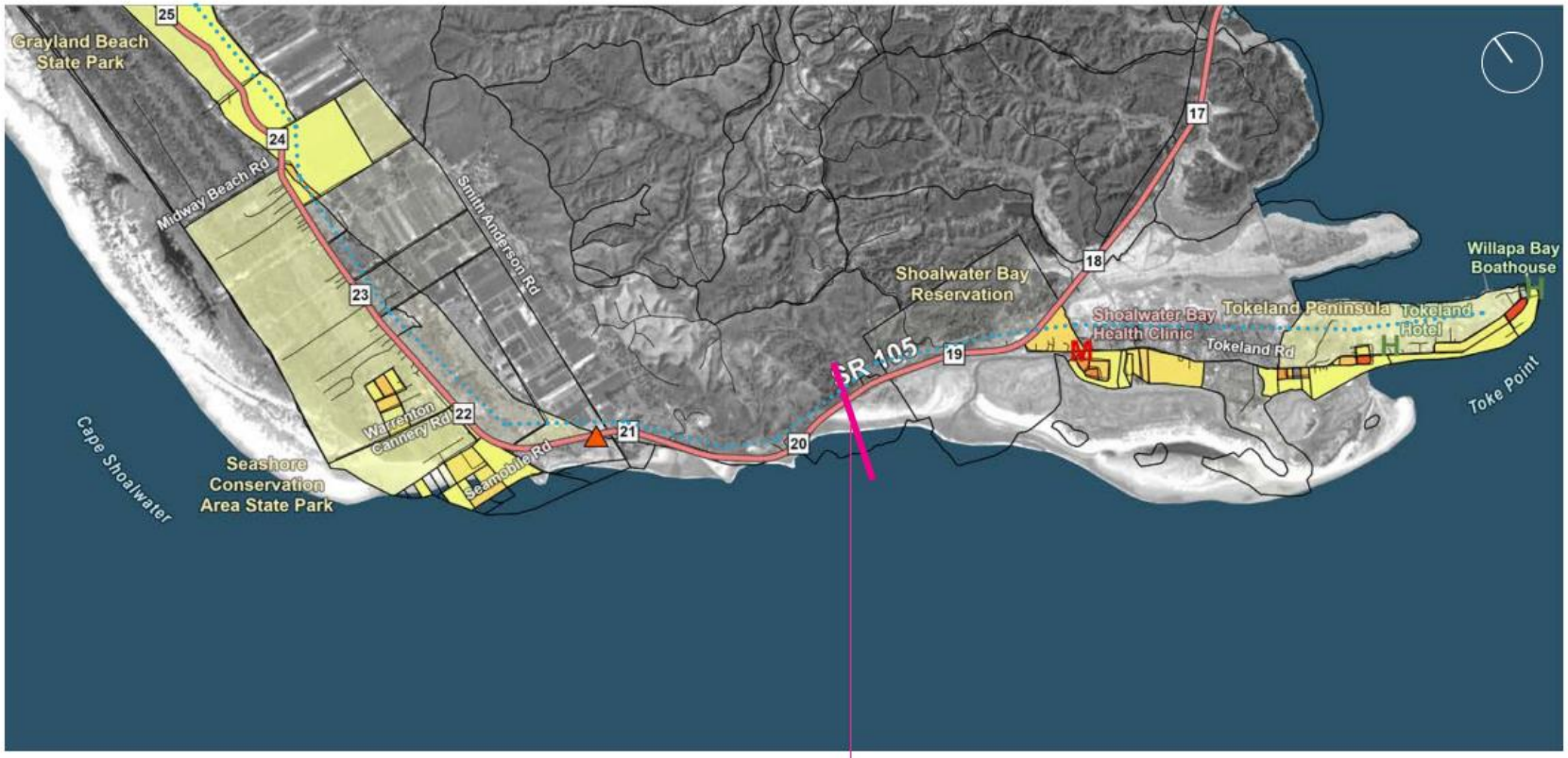
Powerline
Tide Gate
M Medical
H Historic Properties
Roadways
Major Roads
Minor Roads
Other Roads
SR 105
Census Blocks, 2010
Population Density
0.0 Persons/Acre
8.0 Persons/Acre

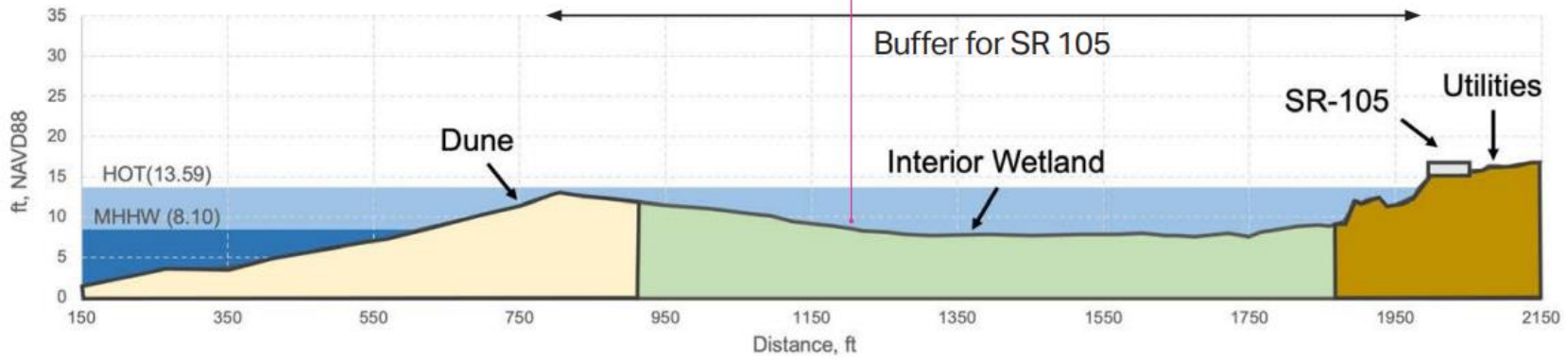
COMMUNITY LIFELINES AT RISK

TRANSPORTATION CORRIDOR

SCHOOLS

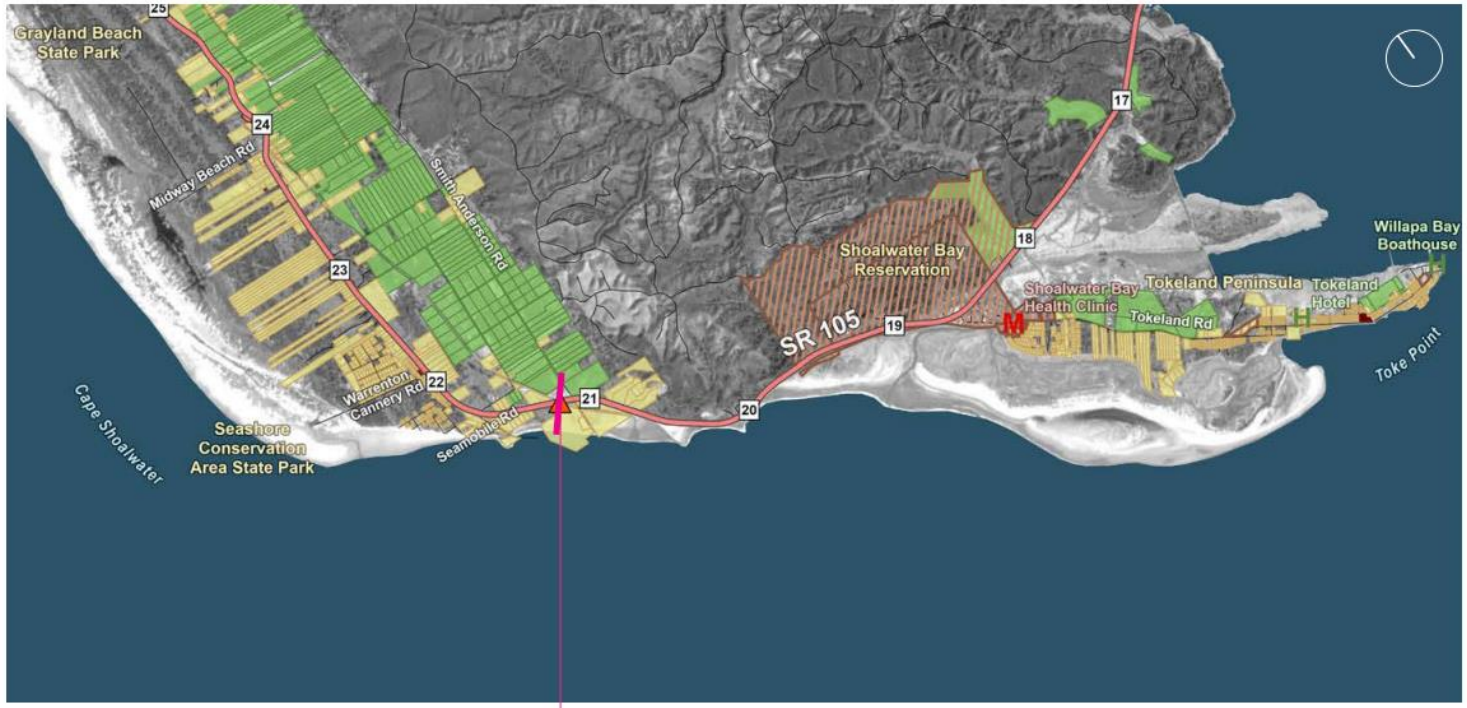
SAFETY AND SECURITY





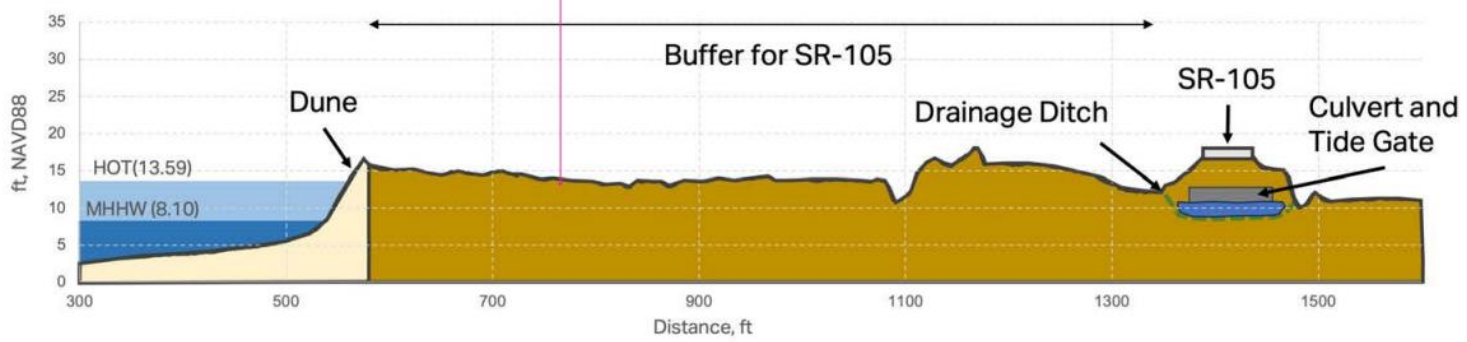
Community Assets at Risk

Tide Gate
Agricultural
Residential
Commercial
Tribal Lands
M Medical
H Historic Properties
Roadways
Major Roads
Minor Roads
Other Roads
SR 105



Saltwater intrusion from a tide gate failure would permanently render these farm unusable for the cranberry farming for the next decade.

Once the salt had leached out and they became farmable it would take > $ 50 million to renovate, replant and restore them to their present farm value.



The Plan


THE PLAN
Grayland Beach State Park
24
Midway Beach Rd
Smith Anderson Rd
23
Seashore Conservation Area State Park
Warrenton Cannery Rd
21
Seamobile Rd
20
SR 105
19
18
17
16
15
Shoalwater Bay Reservation
Tokeland Peninsula
Tokeland Rd
1m
Pacific Ocean
Warrenton Cannery
Seamobile
Smith Anderson
SR 105 Groin
Graveyard Spit
Shoalwater Bay Tribe Empire Spit Dune
Tokeland
Master Plan Project Study Area
Willipa Bay
The Plan:
MONITORING PROGRAM
SECURE FUNDING FOR DYNAMIC REVETMENT
Permitting, Bid Documents and Construction; Monitoring Program
MONITORING PROGRAM, STUDY TO DETERMINE SHORE PROTECTION
Ditch outlet and adjacent to groin, maintenance for groin structure
DYNAMIC REVETMENT
Secure Construction funding for WSDOT dynamic revetment project
MONITORING AND MAINTENANCE
USACE Berm
MONITORING PROGRAM

Summary of Findings & Recommendations 3

Topic	Summary of Findings
• Intergovernmental Collaboration	• **Memorandum of Understanding** – assist for funding requests • **Update Pacific County Hazard Mitigation Plan** – true up HMP with Master Plan to match need, risk
• Pacific County Bldg Moratorium	• **Periodically update Building Moratorium** – reflect dynamic nature of erosion and flood hazards in the study area.
• Grant Funding Opportunities	• **Staffing Resources** - Staff Capacity constrained for many partners, pursue funding to partially fund position

Interlocal Agreement
Memorandum of Understanding

Staff & Volunteer Resource constraints….Funding to assist as a ……
Coordinator, Collaborator, Organizer, Repository, Facilitator, **Dedicated Grant Organizer**

- Use as a template for each project area grant pursuit and discussions with agencies and legislative delegations

APPENDIX G: EXAMPLE OF TWO-PAGERS – GRAVEYARD SPIT

SR 105 / Graveyard Spit Dynamic Revetment and Dune Restoration

On behalf of the local communities of North Cove, Tokeland, Pacific County, the Shoalwater Bay Tribe, and Willapa Erosion Control Action Now (WECAN), Washington State Department of Transportation (WSDOT), WA Department of Ecology, and USACE have finalized the design and permitting for the Graveyard Spit Restoration and Resilience Project (June 2022) and are seeking funding for construction of the design.

The long-term coastal erosion rates at Graveyard Spit are some of the highest of any coastline in the mainland U.S., with up to 107 feet of shoreline loss per year.

This rapid coastal erosion represents a significant hazard to State Route (SR) 105, the sole transportation route serving local communities of Tokeland and North Cove, and the Shoalwater Bay Tribal Reservation that provides access to medical facilities, residential areas, and agricultural lands.

The Graveyard Spit Project will advance community resilience goals to provide vital coastal hazard mitigation for State Route 105, ensuring the region's primary transportation, utility, and emergency access corridor remains functional.

Hazards

- **Coastal Erosion**
- **Flooding**
- **Sea Level Rise**
- **Storm Surge**

The Graveyard Spit Restoration and Resilience Project represents a collaborative solution to address ongoing coastal hazards and improve community and regional resilience. The project team has been working together through a collaborative locally led forum, Willapa Erosion Control Action Now (WECAN), to address severe erosion, flooding, and sea level rise since 2015.

Photo: WA Department of Transportation

Community Lifelines

SR 105 / Graveyard Spit Dynamic Revetment and Dune Restoration

Details

Project Owner
Washington State Department of Transportation

Type of Project
Nature-Based Shoreline Protection

Area of Impact
Graveyard Spit, WA and surrounding communities. SR 105 between mile posts 19.50 to 20.10.

Key Partnerships

This project is part of local communities' regional effort to find a holistic solution to address impacts to life, property, safety, economy, and the environment on the north shore of Willapa Bay.

Ecology and WSDOT have been leading the Graveyard Spit Project because the communities of the region lack the staff capacity and resources to seek funding for this project on their own. This a common challenge for communities within Pacific County, Wahkiakum County, and across Washington's Pacific Coast.

Benefits

Reduced physical damage to transportation infrastructure from erosion and flood events

Reduced loss of service to critical transportation infrastructure

Reduced loss of service to surrounding community from road closures

Critical habitat benefits including dune, wetland, and marsh restoration for ESA listed shorebirds

Cost

At a total cost of approximately $30 million, this project was found to be the most comprehensive and cost-effective solution to address erosion and flooding risks in this area based upon a 2015 analysis of alternatives by WSDOT and a feasibility study by the US Army Corps of Engineers in 2018.

Construction Timeline and Funding

National Environmental Policy Act (NEPA) is anticipated to be complete Summer 2023 and construction is anticipated to begin in Summer 2024.

Through a combination of federal funding programs, the project has received approximately $15 million in grant funding for Phase 1 construction, environmental monitoring, and maintenance rock. WSDOT is pursuing approximately $15 million to complete Phase 2 of construction.

We have several policy improvements we would like to share with the D.C. Office based on our experiences working with local communities through efforts such as the Resilience Action Demonstration Project (RAD).

The RAD project piloted a coordinated agency assistance program to work directly with communities to support local capacity. The RAD Final Report includes a series of recommendations for improving coastal hazards resilience in Washington State, focusing on increasing local capacity and enhancing state assistance to coastal communities and Tribes.

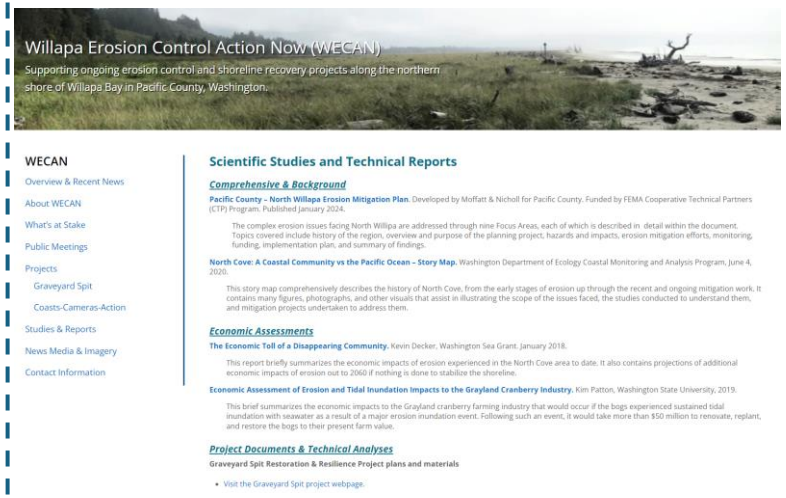
Resources & References

- Willapa Erosion Control Action Now
- Graveyard Spit Restoration and Resilience Project
- 2015 WSDOT Alternatives Analysis
- 2018 USACE Feasibility Study
- Resilience Action Demonstration Project (RAD)
- RAD Final Report

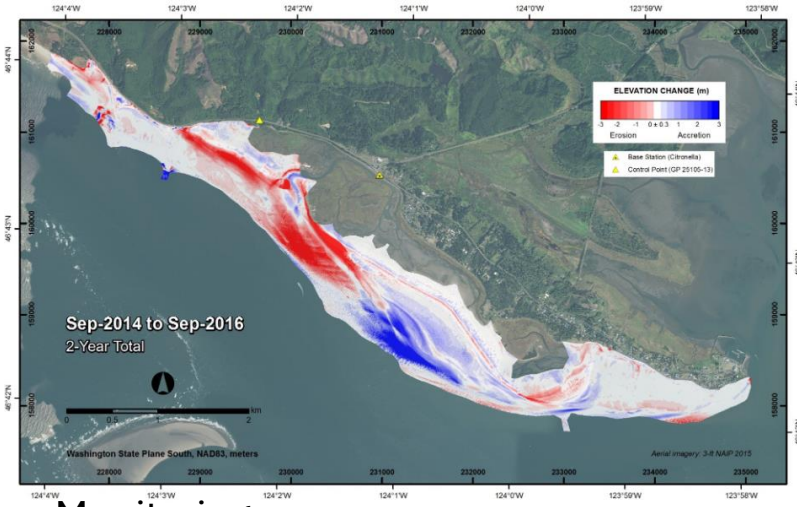
Summary of Findings & Recommendations 4

Topic	Summary of Findings
• Existing Shoreline Protection Systems Maintenance	• **Maintenance Funding** – Dedicated funding to maintain dynamic revetment and other constructed features
• Shoreline Monitoring Program	• **Project Area Annual Monitoring**– Needed for long term success • **Funding & Resources** – Secure funding to ensure seasonal surveys are conducted • **Data Repository** – Need dedicated location to upload and share data
• Streamlining Regulatory Permitting Processes for Shoreline Maintenance	• **Maintenance Permits** – Need quick response to repair/maintain • **Programmatic Approvals** - Facilitate ease of maintenance or project permits in reach

Maintenance

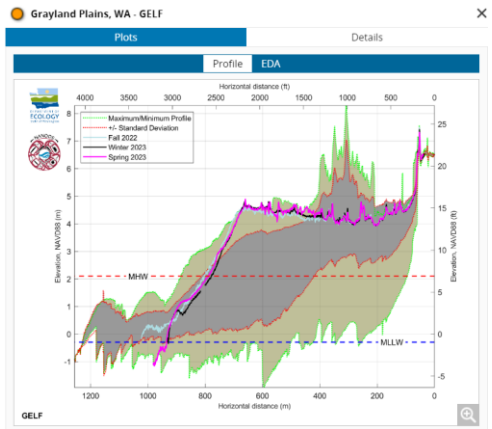


Data Repository



Monitoring

Ease of Permits for Maintenance



GRANT FUNDING – OPPORTUNITIES

INTERGOVERNMENTAL COLLABORATION

Intergovernmental collaboration is already well established in the area. Pacific County, WA Department of Ecology, WA Department of Transportation, and the U.S. Army Corps of Engineers are all involved in an ongoing collaborative process to address hazard mitigation needs. This synergy across multiple agencies and levels of government can be utilized to both cast a wide net in terms of securing grant funding and strengthening individual applications.

COLLABORATION WITH ACADEMIA

Collaboration with local or regional academic institutions can strengthen grant applications as findings can be used to inform future projects in the region, increasing the chance of successful, cost effective efforts. Major research institutions such as the University of Washington and Oregon State University have initiated research on topics such as the dynamics of Willapa Bay Inlet as well as dynamic revetments, providing a strong opportunity for future collaboration.

PUBLIC SUPPORT

Strong public support is often a key driver in securing grant funding to move projects forward. Shoreline erosion is a highly visible hazard among local communities, who have been experiencing impacts for decades, and thus the public is well aware of the importance of effective erosion hazard mitigation. This public support has been demonstrated across multiple outreach efforts to date.

LEVERAGE LOCAL/STATE $$ TO SECURE FEDERAL GRANTS

Federal grant opportunities, which can provide the largest funding source for potential projects, often require some degree of local or state funding match.

Using additional local or state grant funding to help meet this match requirement can significantly reduce the potential financial burden of meeting the federal match requirement. Existing collaboration among local and state agencies means projects will be well positioned to fully leverage any state or local grant funds into additional federal funding.

Partners & Project Team

- Great Collaboration, participation and assistance

Special Thank you…

- George Kaminsky
- David Cattrell (in memory)
- WECAN – Connie & Kelly

PROJECT TEAM AND PARTNERS

PROJECT SPONSOR

Pacific County, Washington

PROJECT TEAM

moffatt & nichol

IN COLLABORATION WITH

S360 · The Watershed Company · Mott MacDonald

PROJECT PARTNERS

Shoalwater Bay Indian Tribe
Pacific County Drainage District #1
U.S. Army Corps of Engineers Seattle District
Pacific Conservation District
Washington Sea Grant
WA State Department of Ecology
WA State Department of Fish and Wildlife
WA State Department of Transportation

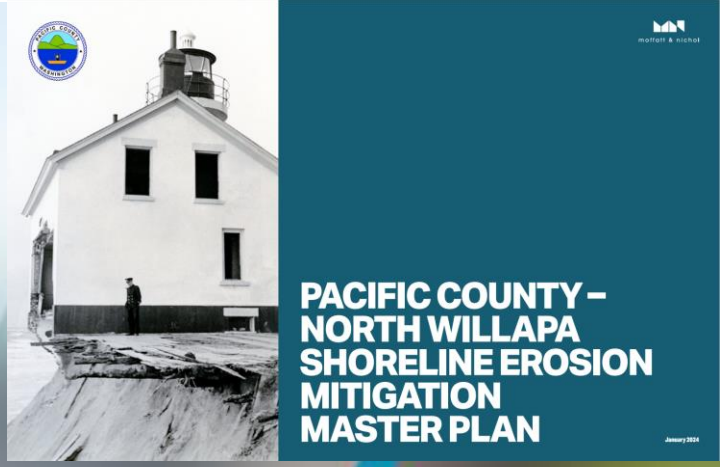
PROJECT PARTNER

FEMA

Cooperative Technical Partners (CTP) Program

STAKEHOLDER COMMITTEE

Charlene Nelson, Earl Davis, Larissa Pfleeger; Shoalwater Bay Indian Tribe
Chris Behrens, David Michalsen, Aurora Deangelis Caban, Janet C Curran; U.S. Army Corps of Engineers
David Cottrell; Pacific County Drainage District and Cranberry Growers
Kelly Rupp and Connie Allen; WECAN and Pacific County Planning Commission
Chelsey Martin, Garrett Jackson, and Chad Hancock; WA Department of Transportation
George Kaminsky, Henry Bell, and Bobbak Talebi; WA Department of Ecology
Mike Nordin; Pacific Conservation District
Jackson Blalock; WA Sea Grant
Rebecca Chaffee; Community Member
Lauren Bauernschmidt; WA Department of Fish and Wildlife



Willapa-Erosion-Mitigation-Master-Plan-Final-Final.pdf (wacoastalnetwork.com)

WECAN Briefing Meeting – August 14, 2024

Willapa Shoreline Erosion Mitigation Master Plan - Overview

In Collaboration with :

Case Study

Case Study

- Large Coastal Zone Erosion Hazard Planning
- Multi-jurisdictional
- Federal Interest
- Long History of collaboration and addressing shoreline erosion

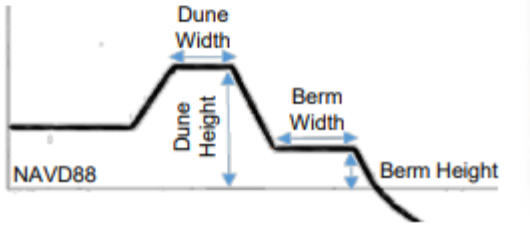
- Case Study not for remedy (slightly different) but program is applicable as a Prototype for discussion and strategic planning

Case Study

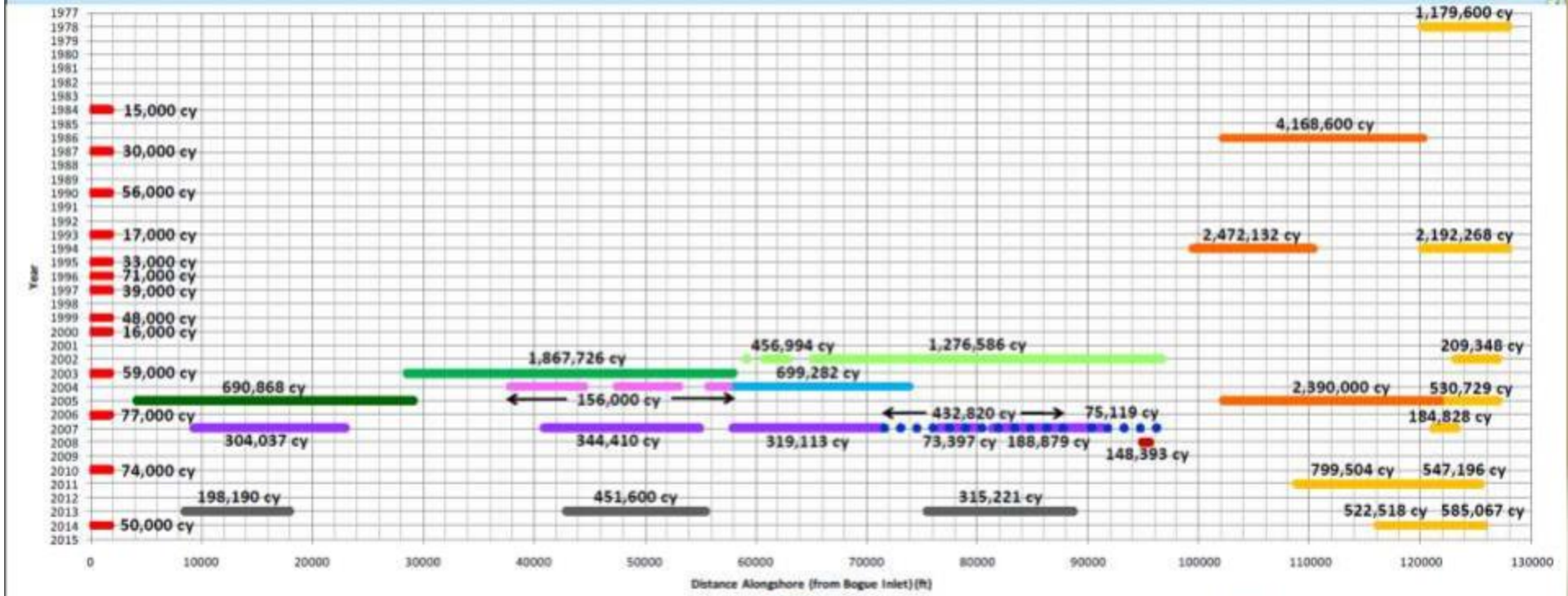
Bogue Banks is a 25-mile long barrier island on the southeastern coast of NC. The island is situated at the southern boundary of North Carolina's 'Crystal Coast', a significant visitor destination which attracts people from every state in the nation.

The shoreline along Bogue Banks consists of a two-part system:

- Berm - the flat region of the beach between the dune and the water line.
- Dune - an elevated section of the beach profile that serves to protect structures from increased water levels during storm events.



HISTORICAL PROJECTS



Bogue Banks Beach Nourishment Projects 1978-2014

- Bogue Inlet AIWW Crossing Disposal
- AIWW Tangent B Disposal
- MCH Inner Harbor Maintenance Dredge Disposal
- Brandt Island Pump-Out
- Bogue Banks Restoration - Phase I
- Bogue Banks Restoration - Phase II
- Bogue Banks Restoration - Phase III
- Section 933 - Phase I
- Section 933 - Phase II
- FEMA Post-Isabel Restoration
- FEMA Post-Ophelia Restoration
- Post-Irene Restoration

Case Study

Project Purpose and Need

Project Purpose

- Establish a regional plan facilitating the authorization and scheduling of Bogue Banks' shoreline nourishment/maintenance events
- Provide long-term shoreline stabilization and an equivalent level of protection along Bogue Banks' 25-mile oceanfront/inlet shorelines
- Provide long-term protection to Bogue Banks' tourism industry, state and local infrastructure, and oceanfront or adjacent structures
- Maintain natural resources and associated recreational uses while avoiding and minimizing adverse environmental impacts to the extent feasible

Case Study

Need for Town Concurrence/Approval of Plan

Permitting Agencies Required Interlocal Agreement as Part of Master Plan

- Agencies desired single point of contact for future permitting of individual projects
- Managing the island's shoreline as an entire system is preferred
- Staging and scheduling of projects for individual municipalities will be more predictable
- Combine FEMA maintenance plan and static line into a single uniform nourishment strategy
- Town concurrence/approval of master plan is integral part of interlocal agreement signed by County/Towns

Project Purpose and Need

Project Purpose – (cont'd)

- Consolidate individual Town/County resources for managing the beaches in a more cost & logistically effective way and reduce/eliminate the time and need for individual authorizations

Need for Project

- A need exists to formulate and implement a Bogue Banks regional, long-term, and self-sustaining oceanfront/inlet shoreline protection program which involves consolidating resources from the County and all municipalities on Bogue Banks in the most effective financial and logistical manner.

Regulatory Permitting Strategies?

- Should some form of a programmatic regulatory process be considered? Would assist with grant funding pursuits, individual project permitting and future maintenance permitting.

DEPARTMENT OF ECOLOGY
State of Washington

What Is the Difference Between a Programmatic and a Project-Level Environmental Impact Statement?

A *programmatic* environmental impact statement (PEIS) evaluates the effects of broad proposals or planning-level decisions that may include any or all of the following:

- A wide range of individual projects;
- Implementation over a long timeframe; and/or
- Implementation across a large geographic area.

The level of detail in a PEIS is sufficient to allow informed choice among planning-level alternatives and to develop broad mitigation strategies. Collaboration among Federal, State, and local agencies and Tribes is especially important in a PEIS process.

The PEIS does not evaluate project-level issues such as precise project footprints or specific design details that are not yet ready for decision at the planning level. Instead, a PEIS is an excellent means for examining the interaction among proposed projects or plan elements, and for assessing cumulative effects. Like a project-level EIS, a PEIS also includes a "no action alternative."

Typically, a PEIS is followed by subsequent project-level environmental reviews in the form of an EIS, Environmental Assessment, or Categorical Exclusion Checklist, for specific components of the proposal. When a project-level environmental review is undertaken for a specific component, the stepwise approach to analyses and decisionmaking is called "tiering."